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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,322	09/25/2006	Barry Scheirer	US040176US	6117

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EXAMINER

SANTOS, JOSEPH M

ART UNIT	PAPER NUMBER
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3737

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,322	Applicant(s) SCHEIRER ET AL.	
	Examiner JOSEPH SANTOS	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim **7** is objected to because of the following informalities: it is unclear as to whether the term "made of" in claim 7 is inclusive or exclusive.

Appropriate corrections required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **1-15** are rejected under 35 U.S.C. 112 as being indefinite because the term "the transducer mechanism" in claim 1 lacks antecedent basis.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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1. Claims **1-13** are rejected under 35 U.S.C. 103 (a) as being unpatentable over Finsterwald et al. (4,802,458) in view of Talbot et al. (6,182,341).
Finsterwald et al. disclose a ultrasonic probe for diagnostic imaging comprising a transducer ("46") located in a bath of ultrasonic fluid (Column 3, lines 5-6).
Finsterwald et al. further disclose a transducer crystal 46 mounted in the probe (Column 2, lines 17- 20) in which the hand-held transducer probe is easy and convenient to use and manipulate (Column 1, lines 20-24). Finsterwald et al. disclose a cone assembly ("22") which is moved during the fluid filling of the probe (Column 3, lines 7-10) in which an acoustic window (portion of element "22") is located in the cone and ultrasonic energy pass to and from the transducer (Column 3, lines 24-26). In addition, Finsterwald et al. further discloses the transducer probe is provided with a sector scanning capability by oscillating the transducer crystal (Column 2, lines 14-17). Finsterwald et al. further discloses in Figure 2, element 46, the curved shape of the "imaging transducer". However, Finsterwald et al. fails to disclose a conductive layer lining the acoustic window, made of gold or titanium, coupled to a reference potential. Finsterwald et al. further fail to disclose the conductive layer is located on the inner surface of the acoustic window and is placed using a vacuum deposition process. Finsterwald further fail to disclose a dome-shape or flat contact lens-shape acoustic window. Talbot et al., in the same field of endeavor, teach a medical ultrasound acoustic window. Talbot et al discloses the adhesion process of the (dome-shaped or flat contact lens-shaped cap) acoustic window 56 and a layer 54 ("RFI shield"), (Column 5, lines 18-21). Talbot et al. further disclose the RFI shield is couple to a reference potential "ground" by connection to "ground flex circuits" (Column 5, lines 4-8). Talbot et al. further disclose the acoustic window 56 is cast directly on top of an epoxy layer 62, in which this epoxy layer is deposited over the top surface of the RFI shield (Column 5, lines 26-31). Talbot et al. further disclose the metal of the RFI shield may be selected from the group including gold, titanium, chromium or alloys thereof (Column 5, lines 43-

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- 45). In addition, the conductive layer has a porous surface (Column 6, lines 34-35). It would have been an obvious matter of design choice to one ordinary skilled in the art to add the conductive layer ("RFI shield") disclosed by Talbot et al. within the acoustic window located in the ultrasound probe apparatus disclosed by Finsterwald et al in order to provide a radio-frequency interference shield in a hospital environment. In addition, it would have been obvious to one ordinary skilled in the art to interpret that the RFI shield is electrically grounded through the ground flex circuits in order to provide electrical protection.
14. Claim **14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Finsterwald et al. (4,802,458) in view of Talbot et al. (6,182,341) as applied to claim 13 above, and further in view of Smith et al. (5,311,095).
Finsterwald et al. in view of Talbot et al. teach the methods and systems disclosed above; however, Finsterwald et al. in view of Talbot et al. fail to disclose that the conductive layer exhibits a thickness of $1/16$ of a wavelength or less of the frequency of the transducer. Smith et al., in the same field of endeavor, disclose that a conductive layer "10" could be less than one quarter the wavelength of the frequency of operation (Column 4, lines 32-45). It would have been obvious to one ordinary skilled in the art to adjust the thickness of the conductive layer to be less than $1/16$ as disclosed by Smith et al in order to increase the conductive layer sensitivity for high resolution medical imaging.
15. Claim **15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Finsterwald et al. (4,802,458) in view of Talbot et al. (6,182,341) as applied to claim 13 above, and further in view of Sleva et al. (5,488,954).
Finsterwald et al. in view of Talbot et al. teach the methods and systems disclosed above; however, Finsterwald et al. in view of Talbot et al. fail to disclose wherein the conductive layer exhibits a thickness in the range of 1000-3000 Angstroms. Sleva et al., in the same field of endeavor, disclose the fabrication of a conductive 1000 Angstrom aluminum layer (Column 7, lines 52-

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53). It would have been obvious at the time the invention was made to utilize a silver conductive layer of 1000 Angstroms in the ultrasound probe with an acoustic window disclosed by Finsterwald et al. in view of Talbot et al. in order to increase the focusing characteristics of the conductive layer.

Response to Arguments

Applicant's arguments filed 07/14/2009 have been fully considered but they are not persuasive.

In the remarks, Applicant argues that (1) Finsterwald et al. nor Talbot et al. provide an RFI shield (2) The RFI shield is not on the inside of the ultrasound chamber (3) the conductive layer referenced in Smith et al. is not in the same field of endeavor of the application (4) the Sleva et al. reference is not in the same field of endeavor of the application.

In response to arguments (1) and (2), Examiner respectfully disagrees. Talbot clearly teaches an RFI shield 54. In addition, although Talbot et al. describe the invention having the RFI shield on top of the acoustic window, it would have been an obvious matter of design choice to one ordinary skilled in the art to include the RFI within the acoustic window. Therefore, Examiner maintains that Talbot does teach and suggest this limitation. In response to arguments (3) and (4), Examiner respectfully disagrees. It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both Smith et al. and Sleva et al. are directed to the fabrication and usage of medical ultrasonic devices. The current application is also directed to the enhancement of ultrasonic transmission. Therefore, the prior art and the current invention are directed to substantially the same problem and thus are analogous prior art.

Conclusion

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSEPH SANTOS whose telephone number is 571-270-7782. The examiner can normally be reached on Monday through Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BRIAN CASLER can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.S./
Examiner, Art Unit 3737

/Ruth S. Smith/
Primary Examiner, Art Unit 3737